TECHNICAL WORK MAY NOT BEGIN PRIOR TO CO APPROVAL

NASA/GODDARD SPACE FLIGHT CENTER

REQUEST FOR TASK PLAN / TASK ORDER

CONTRACTOR	CONTRACT NO./TASK NO.	JOB ORDER NUMBER	APPROP. FY
QSS Group, Inc.	NAS5- 99124 TASK NO. 399 AMENDMENT	563-740-50-14-89	2000

TASK TITLE: (NTE 80 characters; include Project name)

SWIFT/BAT Power Electronics Assembly

APPROVALS: (Type or print name and sign)

	DATE	ORG CODE	MAIL CODE	PHONE
ASSISTANT TECHNICAL REPRESENTATIVE (OR TASK MONITOR) Wilbur D. Brigham Wilbur D Brigham	10/4/00 10/2/00	563	563	301-286-1140
BRANCH HEAD Marlon L Enciso Marlon L. Enciso	DATE	CODE 563		PHONE 301-286-5845
CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR) Robert S. Lebair, Jr. Robert S. Lebair, Jr.	DATE 10/10/00	CODE 560		PHONE 301-286-6588

FLIGHT HARDWARE, CRITICAL GSE OR SOFTWARE? (IF YES, NEED CODE 303 CONCURRENCE NEXT BLOCK)	CONTRACTING OFFICER'S QUALITY REP.	DESIGNATED FAM:
[ ] NO [X] YES	DAC for L. Moore Larry Moore	Ronald E. Kolecki

The contractor shall identify and explain the reason for any deviations, exceptions, or conditional assumptions taken with respect to this Task Order or to any of the technical requirements of the Task Order Statement of Work and related specifications. The contractor shall complete and submit the required Reps and Certs.

(To be completed by Contracting Officer)
C.O. Requested Quote on:
Date:

Contractor will develop specification or statement of work under this task for a future procurement. [X] NO [ ] YES

Flight hardware will be shipped to GSFC for testing prior to final delivery. [ ] NO [X] YES [ ] N/A

Government Furnished Property/Facilities: [ ] NO [X] YES -- SEE LIST OF GFP (offsite only) / FACILITIES (onsite only)

Onsite Performance: [ ] NO [X] YES If yes: [ ] TOTAL [X] PARTIAL
If partial, indicate onsite work in SOW by asterisk (*)

Surveillance Plan Attached: [X] NO [ ] YES

Highlighted Contract Clauses: *(to be completed by Contracting Officer)*

INCENTIVE FEE STRUCTURE (check one)
(See Contract NAS5-99124, Attachment K, Incentive Fee Plan)

	___ No. 1	___ No. 2	_X_ No. 3	___ No. 4	___ No. 5
Cost	10%	50%	25%	25%	%
Schedule	15%	25%	25%	50%	%
Technical	75%	25%	50%	25%	%

(To be completed by Contracting Officer)

The target cost of this task order is $_____.
The target fee of this task order is $_____.
The total target cost and target fee of this task order as contemplated by the Incentive Fee clause of this contract is $_____.

The maximum fee is $_____.
The minimum fee is $0.

AUTHORIZED SIGNATURE:

THIS TASK ASSIGNMENT IS ISSUED ACCORDING TO THE CONTRACT CLAUSE "TASK ASSIGNMENTS AND REPORTS"

SIGNATURE OF CONTRACTING OFFICER | DATE | TYPED NAME OF CONTRACTING OFFICER

CONTRACTOR'S ACCEPTANCE:

AUTHORIZED SIGNATURE | DATE

GSFC FORM 703-1845 12/98 (OLDER VERSIONS ARE OBSOLETE)

DISTRIBUTION: CONTRACTOR, CONTRACTING OFFICER, COTR, CODE 303, RESOURCES ANALYST, ASSISTANT TECHNICAL REPRESENTATIVE

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REQUEST FOR TASK PLAN / TASK ORDER

CONTRACTOR	CONTRACT NO./TASK NO.		
	NAS5-	TASK NO.	AMENDMENT
QSS Group, Inc.	99124	399	

Applicable paragraphs from contract Statement of Work: Function II, Paragraphs D5, and E

STATEMENT OF WORK: (Continue on blank paper if additional space is required)

See Page 3.

PERFORMANCE SPECIFICATIONS:

1. Perform Printed Wiring Board design/layout, fabrication, and assembly documentation using THEDA PCB S/W, version 2.1 (or later), Mentor PCB S/W Version C.4 (or later) or PADS Power PCB S/W, Version 2.0 (or later), or eqivalent.
2. Perform Enclosure, and related hardware, fabrication and assembly documentation using Autocad 14 (or later) format, or equivalent.
3. Perform Electrical design using Viewlogic/simulations and Model Tech/Design Synthesis, or equivalent.
4. Status Meetings: acceptable performance is the meeting covers the status of all ongoing activities related to the task including schedule, cost and potential or unresolved problem areas.
5. Technical Progress Report: Acceptable performance is that the ATR is satisfied that he is being kept informed of the status of work performed and of issues requiring his attention.
6. Reports and Documents: Technical performance will be based on thoroughness and completeness of written reports. Acceptable performance is that the ATR is satisfied that the material reflects the proper level of technical expertise and meets the objectives of the activity. Reports shall be delivered to the ATR both as a hard copy and in MS Word format via either diskette or email.
7. Management: Performance will be measured against the following metrics: (1) accomplishment of objectives; (2) clear, incremental progress; (3) responsiveness to issues; (4) efficient and appropriate staffing; and (5) coordination with and good working relationship with ATR and other related contractor efforts, if applicable.

APPLICABLE DOCUMENTS:

See Statement of Work, Section 1.4.0, "Applicable Documents"

TASK END DATE: 7/31/01

MILESTONES/DELIVERABLES AND DATES:

Status Meetings: minimum of twice per month with ATR and all other relevant GSFC and subcontractor personnel
Technical Progress Report: due monthly, 15th of the month

Additional Deliverables: see Statement of Work, Section 1.9.0, "Deliverables Schedule", and Attachment A, "Hardware Deliverables List"

PERFORMANCE STANDARDS:

Schedule: On-time delivery/completion of the deliverables/milestones
Technical: Meets requirements as specified in Statement of Work, Section 1.1.0, "Requirements"

FINAL DELIVERY DESTINATION (NAME, BLDG, ROOM):
Wilbur D. Brigham, building 20, room 162

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REQUEST FOR TASK PLAN / TASK ORDER

Contract NAS5-99124

Task #: 399

SWIFT/BAT POWER ELECTRONICS ASSEMBLY STATEMENT OF WORK

1.0 SCOPE

The purpose of this task is to produce the SWIFT Burst Alert Telescope (BAT) Power Electronics, the Block Voltage Regulator (BVR), the XA1 Voltage Regulator (XA1VR), and the Temperature Controller/Filter Engineering Test Unit (ETU) and Flight Unit (FU) assemblies. To complete this task the contractor shall provide the skills, facilities, materials and support services necessary to design (as applicable), fabricate, assemble and deliver these units.

1.1.0 REQUIREMENTS

1.1.1 Design

Electrical: The BAT Power Electronics, BVR Electronics, and XA1VR Electronics electrical designs will be provided to the contractor by the GSFC.

Mechanical: The contractor shall provide mechanical packaging design for the four (4) Power Converter ETU and FU Printed Wiring Assemblies (PWA). The FU mechanical packaging design shall include mechanical design, Structural and Thermal analysis, and all associated hardware and materials such as heat sinks, connector brackets and mounting hardware for the Power Converter boards. The contractor shall also provide board level mechanical and board-to-box level mechanical and thermal design and analysis for the XA1VR, BVR, and Temperature Controller/Filter ETU and FU assemblies.

The Power Electronics, BVR, XA1VR, and Temperature Controller/Filter ETU and FU electronics hardware development will require close coordination and review between the GSFC Lead Engineers and the contractors representatives and designers in order to meet electrical, EMI, radiation, mechanical and thermal requirements, and ensure successful overall design and assembly.

1.2.0 MANUFACTURING

The contractor shall provide the required skills and materials (less the GFE specified in section 1.7.0) required to completely fabricate and assemble the ETU and FU electronics equipment described in section 1.1.0. This equipment shall be fabricated in accordance with the requirements of sections 1.4.0 and 1.6.0 of this SOW. Conformal coating and staking shall be applied to the flight electronics equipment, after engineering test, in accordance with the project schedule.

1.2.1 Quantities

See Attachment A (Hardware Deliverables List) for a detailed list of hardware types and quantities.

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1.3.0 TESTING

1.3.1 Mechanical Testing

The GSFC will perform mechanical testing.

1.3.2 Electrical Testing

The GSFC will perform electrical testing.

1.3.3 Environmental Testing

The GSFC will perform environmental testing.

1.4.0 APPLICABLE DOCUMENTS (Partial List)

1.4.1 GSFC Engineering "Drawing Standards Manual," Doc. No. X673-64-1E
1.4.2 Applicable GSFC Approved Contractors Procedures.
1.4.3 GFE schematics, net lists, and parts specification lists.
1.4.4 NASA-STD-8739.3 and NAS5300.4 series documents for the fabrication, assembly, wiring, and coating of flight electronics hardware.
1.4.5 GSFC Quality Manual, GPG 8730.3.

1.5.0 STATUS REPORTING REQUIREMENTS

The contractor is required to conduct meetings with the task Technical Monitor and all other relevant GSFC and subcontractor personnel a minimum of twice per month. This meeting shall cover the status of all ongoing activities related to the task including schedule, cost and potential or unresolved problem areas.

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1.6.0 QUALITY REQUIREMENTS

QA Requirements for Flight Hardware

The contractor shall work in accordance with SWIFT Programs Mission Assurance Requirements document #GSFC-SWIFT-410-SPEC-002 dated March 1, 2000 and flow down to sub-contractor.

All in process inspections are delegated to the sub-contractor.

DCMC delegated to sub-contractor. SAM will determine DCMC and sub-contractor mandatory inspections steps.

The contractor shall perform final board level inspection post board soldering.
The contractor shall perform final board level inspection post conformal coating.
The contractor shall perform final board level data package review.

QA Requirements for Non-flight Hardware

Government source inspection is not required for non-flight hardware. The contractor shall perform Quality Assurance workmanship inspections of all non-flight hardware to best commercial practice.

1.7.0 GOVERNMENT FURNISHED EQUIPMENT (GFE)

1.7.1 Finalized and signed-off circuit board schematics and net lists.

1.7.2 Applicable documents as requested.

1.7.3 All EEE Parts. The GSFC will provide Parts Lists of all parts to be provided.

1.7.4 Power Electronics, Temperature Controller/Filter, BVR, and XA1VR Housings.

1.7.5 Housekeeping, 28V Switch, Filter, Backplane, Extender, BVR, XA1VR, Temperature Controller/Filter Printed Wiring Boards (PWB).

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1.8.0 DELIVERABLES

1.8.1 Design and Manufacturing Documentation

A complete design package shall be delivered. The package shall consist of the following:

1. Electronic copy of final assembly and piece part fabrication drawings.
2. One hard copy of final assembly and piece part drawings.
   Note: Additional copies of drawings may be required, as needed, during the development of the packaging design.
3. All original fabrication and assembly drawings.
4. Peer Review and PDR or comparable Presentation Packages.
5. CDR or comparable Presentation Package.
6. Final Structural/Fracture and Thermal reports documenting all analyses conducted and the results.
7. Materials and Processes List (contractor proposed materials) for Peer Review and PDR.
8. Final, complete Materials List (including GFE and GFP) for CDR.
9. Final End Item Acceptance Data Package including the as-built Configuration List, the as-built Materials and Processes List, the WOA and/or Certification Logs and a list of any open items.
10. Performance Assurance documentation as required.

1.8.2 Hardware

The contractor shall deliver one (1) each Power Electronics Box ETU and FU assemblies, one (1) set each of BVR ETU and FU assemblies, one (1) set each of XA1VR ETU and FU assemblies, and one (1) set each of Temperature Controller/Filter ETU and FU assemblies. These hardware deliverables shall be according to Attachment A (Hardware Deliverables List), and per the schedule in section 1.9.0. Any residual, unused hardware shall also be returned to the ATR. All deliverables related to this task shall be made in person to the task ATR or his duly appointed representative. This shall be the method of delivery unless explicitly specified otherwise by the task ATR.

1.8.3 Parts

The contractor shall anticipate delivering twenty-five (25) part types due to late design changes.

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1.9.0 DELIVERABLES SCHEDULE

1.9.1 Design Documentation

Deliverable to fabrication

Power Elect. Conv. 01	8 weeks after ATR approval of EE design.
Power Elect. Conv. 02	8 weeks after ATR approval of EE design.
Power Elect. Conv. 03	8 weeks after ATR approval of EE design.
Power Elect. Conv. 04	8 weeks after ATR approval of EE design.

1.9.2 Hardware Assembly

Deliverable to test

Power Electronics ETU	8 weeks after ATR approval for assembly.
Power Electronics FU	12 weeks after ATR approval for assembly.
BVR ETU	12 weeks after ATR approval for board assembly.
BVR FU	16 weeks after ATR approval for board assembly.
XA1VR ETU	12 weeks after ATR approval for board assembly.
XA1VR FU	16 weeks after ATR approval for board assembly.
Power Converter/Filter ETU	8 weeks after ATR approval for assembly.
Power Converter/Filter FU	12 weeks after ATR approval for assembly.

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ATTACHMENT A
(Hardware Deliverables List)

SWIFT/BAT Power Electronics ETU and FU Hardware Assemblies

HARDWARE	Sides *	TEST ASS'Y	ETU ASS'Y **	UNPOP ETU PWB	FLT ASS'Y	SPARE FLT ASS'Y	Unpopulated	
							PWB	Parts
Hskpng PWA	1	0	1	1	1	0	2	1
28V Switch PWA	1	0	1	1	1	0	2	1
Filter PWA	1	0	1	1	1	0	2	1
Pwr Conv 01 PWA	2	0	1	1	1	0	2	1
Pwr Conv 02 PWA	2	0	1	1	1	0	2	1
Pwr Conv 03 PWA	2	0	1	1	1	0	2	1
Pwr Conv 04 PWA	2	0	1	1	1	0	2	1
Backplane PWA	1	0	1	1	1	0	2	1
BVR PWA	1	0	2	1	16	0	2	1
XA1VR PWA	1	0	2	1	16	0	2	1
Extender PWA	2	0	2	1	0	0	2	1
BVR Elect Box assembly	N/A	0	2	N/A	16	0	N/A	N/A
XA1VR Elect Box assembly	N/A	0	2	N/A	16	0	N/A	N/A
Pwr Elect Box assembly	N/A	0	1	N/A	1	1	N/A	N/A
Temp Cont/Filter Box assemby	1	0	1	1	16	0	2	1

* The number "1" in the "sides" column indicates a single PWA with capability for parts mounting on both sides. The "2" in the "sides" column indicates two, single-sided PWA's laminated to a metal heatsink.

** All PWA's will require re-layout and re-fabrication prior to flight assembly.